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BULLETIN
OF THE
TORREY BOTANICAL CLUB

JULY, 1910

Studies of West Indian plants — III

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12. THE WEST INDIAN SPECIES OF COMOCLADIA P. BR.
COMOCLADIA* P. Br.; L. Syst. ed. 10, 861. 1759

Type species: *Comocladia pinnatifida* L.

1. Leaves entire or undulate.
A. Glabrous species.
a. Lateral leaflets distinctly stalked.

1. COMOCLADIA PINNATIFIDA L. Syst. ed. 10, 861. 1759

Comocladia integrifolia Jacq. Enum. Pl. Carib. 12. 1760.

TYPE LOCALITY: Jamaica.

Both names are based wholly on P. Browne, Hist. Jam. 124, where the generic name is printed *Comocladia*. Browne refers to Sloane's description and figure of "Prunus racemosa, caudice non ramosa" (Hist. Jam. 2: 131. pl. 222. f. 1); the illustration there given is not wholly satisfactory for the plant which has been taken for this species, but which is here accepted as usually interpreted.

DISTRIBUTION: Moist woodlands at middle and lower elevations throughout Jamaica; Haiti and Santo Domingo.

*The spelling of the generic name was changed by Linnaeus to *Camocladia*, but this form is here regarded as a typographical error, although it was continued by Linnaeus, in the second edition of Species Plantarum, and in successive editions of the Systema, but was changed back to the original by Gmelin (Syst. ed. 13. 1791). The original spelling was accepted by Jacquin, by Swartz, and by most subsequent authors.

[The BULLETIN for June, 1910 (37: 273-344. pl. 33), was issued 21 J1 1910.]

2. *Comocladia Hollickii* sp. nov.

Low, flowering when not more than 1 m. high, the tallest plants seen not more than 3 m. high. Leaves 3–4 dm. long, glabrous; leaflets 17–21, distinctly petioluled, subcoriaceous in texture, undulate-dentate with acutish teeth, acuminate at the apex, obtuse or truncate at the base; lower leaflets ovate, 3–5 cm. long, middle leaflets (5 or 6 pairs) ovate-lanceolate to oblong, 6–9 cm. long, terminal leaflet broadly lanceolate, long-petioluled, 6–8 cm. long; petiolules of the lateral leaflets 1.5–3 mm. long; petioles 3–6 cm. long; inflorescence glabrous, short, about 8 cm. long, sparingly branched, narrow; pedicels 1 mm. long or less; corolla-buds 0.5 mm. in diameter, purple; sepals and petals obtuse, rounded; filaments twice as long as the anthers.

Rocky hillside, Bluefields Mountain, Jamaica, at 500 m. altitude (*Britton & Hollick 2000*, March, 1908, type); wooded hill, Potsdam, Santa Cruz Mountains, Jamaica (*Britton 1271*).

3. *Comocladia grandidentata* sp. nov.

A slender tree, up to 10 m. high. Leaves glabrous, about 8 dm. long; leaflets about 29, petioluled, thin in texture, coarsely irregularly dentate with obtuse or acutish teeth, acute or abruptly acuminate at the apex, obtuse or subtruncate and more or less oblique at the base, the lower 4 or 5 pairs ovate, 3.5–6 cm. long, the others oblong, oblong-lanceolate or somewhat oblong-oblan-ceolate, 7–11 cm. long, 2.5–4 cm. wide; lateral petiolules 2–3 mm. long; flowers and fruit unknown.

Hopeton, Westmoreland (*Harris 9944*, Sept. 19, 1907).

4. *COMOCLADIA EHRENBORGII* Engler, Bot. Jahrb. 1: 420. 1881

TYPE LOCALITY: Santo Domingo.

DISTRIBUTION: Santo Domingo.

Note.—Known to me only from the description. A glabrous species, its leaves with only two pairs of entire ovate short-petioluled leaflets.

b. Lateral leaflets sessile or subsessile.

5. *Comocladia parvifoliola* sp. nov.

A tree, up to 10 meters high, glabrous throughout. Leaves 1–2 dm. long; leaflets 7–11, coriaceous, entire, sessile, or on petiolules 1 mm. long or less, rounded or subcordate at the base, acute or bluntly short-acuminate at the apex, the lowest pair ovate,

2-4 cm. long, the others oblong or oblong-lanceolate, 4-7 cm. long; panicles very slender, as long as the leaves or longer; flowers minute; sepals broadly ovate, obtuse; petals twice as long as the sepals, oval-orbicular, rounded; stamens a little shorter than the petals.

Woodlands, Dolphin Head Mountain, Jamaica (*Britton 2473*, March, 1908, type; *Harris 10,267*).

6. *COMOCLADIA CORDATA* N. L. Britton, *Torreyia* 7: 6. 1907

TYPE LOCALITY: Troy, Jamaica.

DISTRIBUTION: Known only from the type locality.

B. Pubescent species.

a. Lateral leaflets distinctly stalked.

7. *COMOCLADIA PUBESCENS* Engler, *Bot. Jahrb.* 1: 420. 1881

TYPE LOCALITY: Jamaica.

DISTRIBUTION: Jamaica, in woodlands at lower and middle elevations in relatively moist districts.

8. *Comocladia jamaicensis* sp. nov.

Low, about 2 meters high. Leaves 3-4.5 dm. long, the rachis loosely pilose; leaflets about 21, thin in texture, distinctly petioluled, obtuse or subtruncate at the base, acute to acuminate at the apex, glabrous above, sparingly pubescent on the veins beneath, undulate-dentate or some of them nearly entire; lateral petiolules 2-3 mm. long; lower two or three pairs of leaflets ovate, 3-5 cm. long, the others lanceolate, ovate-lanceolate or oblong, 5-10 cm. long, 1.5-4 cm. wide; inflorescence puberulent, shorter than the leaves, about 3 dm. long, its branches short and slender; sepals and petals obtuse; young stamens with filaments not longer than the anthers.

On dry rocky hill, Green Island, Jamaica (*Britton & Hollick 2132*, March, 1908, type; *Harris 10,250*).

b. Lateral leaflets sessile or subsessile.

9. *COMOCLADIA VELUTINA* N. L. Britton, *Torreyia* 7: 6. 1907

TYPE LOCALITY: Great Goat Island, Jamaica.

DISTRIBUTION: Jamaica, on very dry rocky hillsides and sand dunes near the southern coast, Healthshire Hills to Great Pedro Bay.

Note.—Recorded by Grisebach from Jamaica as *C. propinqua*, which it little resembles.

10. *Comocladia pilosa* sp. nov.

A tree, 6 meters high, the young twigs, leaves, and inflorescence densely pilose-pubescent. Leaves about 7 dm. long; leaflets about 19, chartaceous, dark green above, paler beneath, entire-margined, the lateral ones sessile, or on petiolules about 1 mm. long, cordate or subtruncate at the base, obtuse, acutish or abruptly short-acuminate at the apex; lowest pair of leaflets suborbicular, 4–5 cm. long; second and third pairs ovate-orbicular, 5–8 cm. long, the others oblong or ovate-oblong, 9–14 cm. long, 4–5 cm. wide; terminal leaflet long-stalked; panicles several, shorter than the leaves, 2.5 dm. long or less, the branches rather stout; calyx with a few scattered hairs, the sepals rounded; petals a little longer than the sepals, rounded; filaments twice as long as the anthers.

Wooded hill, Union Hill, near Moneague, Parish of St. Ann's, Jamaica (*Britton & Hollick* 2762, April, 1908).

11. *COMOCLADIA UNDULATA* Urban, Symb. Ant. 5: 401. 1908

TYPE LOCALITY: Martinique.

DISTRIBUTION: Known only from Martinique.

2. Teeth of the leaves bristle-tipped.

A. Glabrous species.

12. *COMOCLADIA PLATYPHYLLA* A. Rich.; Griseb. Cat. Pl. Cub. 68. 1866

TYPE LOCALITY: Cuba [*Rugel* 277, the type specimen, is from Matanzas].

DISTRIBUTION: Cuba, at lower altitudes, provinces of Oriente, Camagüey, Santa Clara, Matanzas, and Havana.

Note.—Lower leaflets ovate, the others mostly oblong. Engler (DC. Mon. Phan. 6: 365) describes a specimen with all the leaflets ovate, long-stalked, and with only 3 or 4 teeth on each margin. The number of teeth is often 9 on each margin. The species consists of a number of races, differing in width of leaflets, length of petiolules and number of teeth on the leaf-margins, the extremes appearing quite different from each other.

A. Richard (in Sagra, Hist. Cub. 10: 155. 1850) remarks

as follows concerning this species, which was subsequently described by Grisebach:

"I have observed an example of this tree, but without flowers, which, it seems to me, could form, if not a distinct species, which I am not far from believing, at least a very notable variety. The leaflets are almost as large as the leaves of the 'castaño,' are also rough on both faces, dentate and spine-like in their contour; and, in short, recall in all their shape the leaflets of *Comocladia dentata*, but are much larger and rougher. If the opportunity comes to see this plant with flower and fruit it will perhaps be possible to form a distinct species to which the name *Comocladia platyphila** will apply perfectly."

13. *COMOCLADIA INTERMEDIA* C. Wright; Engler in DC.

Mon. Phan. 4: 366. 1883

TYPE LOCALITY: Cuba. [Wright's specimen in the Kew Herbarium is from Trinidad, Cuba.]

DISTRIBUTION: Southern coast of Santa Clara Province, Cuba, in dry districts.

14. *Comocladia acuminata* sp. nov.

Leaves about 1 m. long, glabrous. Leaflets about 31, chartaceous, short-petioluled, the lowest ovate to ovate-lanceolate, 5-6 cm. long, the others oblong-lanceolate, 10-14 cm. long, 3-4 cm. wide; slenderly acuminate at the apex, broadly cuneate at the base, serrate with about 8 bristle-tipped teeth on each margin, the veins prominent on the underside, diverging nearly at right angles from the slender midvein, the under surface paler green than the upper; panicles 4 dm. long, glabrous, slender, their branches widely diverging, 8-12 cm. long; flowers 4-parted, about 1.5 mm. broad.

Santo Domingo (*Wright, Parry & Brummel 192*, in United States National Herbarium).

B. Pubescent species.

15. *COMOCLADIA GLABRA* Spreng. Syst. 1: 176. 1825

TYPE LOCALITY: Porto Rico.

DISTRIBUTION: Porto Rico, at lower and middle elevations

*Doubtless a misprint for *platyphylla*.

in moist and wet districts. Recorded by Engler from Santo Domingo and from Cuba.

The inflorescence, leaf-rachis, and venation of this species are sparingly pubescent. The races differ greatly in the length of the spiny tips of the teeth of the leaflets.

16. *COMOCLADIA DENTATA* Jacq. Enum. Pl. Carib. 12. 1760

Comocladia propinqua H. B. K. Nov. Gen. 7: 16. 1824.

Comocladia dentata propinqua Engler, in DC. Mon. Phan. 4: 364. 1883.

TYPE LOCALITY: Near Havana, Cuba (according to Jacq. Stirp. Am. 13. pl. 173).

DISTRIBUTION: Woodlands at lower elevations, provinces of Camagüey, Havana, Matanzas, and Santa Clara, Cuba, ascending to 420 meters on the Trinidad Mountains; Santo Domingo.

Field observations indicate that *Comocladia dentata* and *C. propinqua* can not be held as distinct species; the leaflets vary from narrowly lanceolate to broadly ovate, and from sharply spinulose-dentate to nearly or quite entire. The tree becomes 6 meters high in Santa Clara, Cuba.

Note.—*Comocladia dentata brevifolia* Engler, in DC. Mon. Phan. 4: 364. 1883.

I have not seen this plant, described as from "Domingo" it may be the same as the following species.

17. *Comocladia domingensis* sp. nov.

Twigs densely short-pubescent. Leaves about 2 dm. long, the rachis densely short-pilose; leaflets 17–19, ovate to ovate-elliptic, sessile, chartaceous, obtuse at the apex, rounded or subtruncate at the base, glabrous and rather dark green above, pilose on the prominent veins and light green beneath, the lower ones 1.5–2.5 cm. long, the others 4–5 cm. long, 2–3 cm. wide, serrate with 7 or 8 spinulose-tipped teeth on each margin and spinulose at the apex; panicles narrow, slender, loosely pilose, about 13 cm. long; flowers 4-parted; sepals orbicular, 0.5 mm. long; petals ovate, obtuse, 1 mm. long; stamens much shorter than the petals.

Santo Domingo (*Wright, Parry & Brummell 190*, in United States National Herbarium).

18. *Comocladia Dodonaea* (L.)

Ilex Dodonaea L., Sp. Pl. 125. 1753.

Comocladia tricuspidata Lam. Mém. Acad. Sci. Paris 1784: 347. 1787.

Comocladia ilicifolia Sw. Prodr. 17. 1788.

TYPE LOCALITY: "America meridionalis."

Plumier's *plate 118, f. 1*, identifies this species beyond doubt.

DISTRIBUTION: Santo Domingo (according to Engler); Porto Rico, at low elevations in dry districts; Culebra; St. Thomas; St. Croix; Montserrat; Antigua; Guadeloupe; Mustique Island, Grenadines.

Note.—This species is the monotype of the genus *Dodonaea* (Plum.) Adans. 1763.

13. THE GENUS *VIBURNUM* IN JAMAICA1. *Viburnum villosum* Sw. Prodr. 54. 1788

Hillsides and woodlands in moist and wet districts, at middle and higher altitudes, ascending to 2300 meters in the Blue Mountains.

The species apparently consists of numerous races, differing in the amount of stellate pubescence, in the shape of the fruit, and in the length of the stamens. Very densely tomentose bushes grow in proximity to slightly pubescent ones about Cinchona.

2. *Viburnum arboreum* sp. nov.

A tree, 15 m. high, with a straight trunk and spreading branches. Leaves chartaceous, entire, oval-elliptic, dull green, glabrous or sparingly stellate-pubescent above, loosely stellate-pubescent beneath, 8–12 cm. long, 5–6.5 cm. wide, short-acuminate at the apex, unequally narrowed or obtuse at the base, the veins about 6 on each side of the midvein, the stout petioles stellate-pubescent, 1–2 cm. long, inflorescence stellate-pubescent, 8–12 cm. broad; fruiting pedicels 3 mm. long or less; fruit oblong, 9–10 mm. long and 3 mm. thick when dry, narrowed at both ends, crowned by the ovate acute ciliate calyx-lobes and tipped by the base of the style.

Wooded rocky hill, Tyre, Cockpit Country (*Britton*, Sept. 13–18, 1906, *no.* 553, *type*; *Harris* 9475). *Harris* 9403 from the same region, a shrub with white flowers, is probably this species.

3. *VIBURNUM ALPINUM* Macf. Fl. Jam. 2: 201. 1850

Hillsides and woodlands at middle and higher elevations in both relatively dry and wet districts, ascending to at least 1800 meters in the Blue Mountains. Erroneously regarded by Grisebach as identical with *V. glabratum* H.B.K. of Mexico and South America.

14. HITHERTO UNDESCRIBED SPECIES OF JAMAICA

Thrinax Rex Britton & Harris, sp. nov.

Trunk up to 20 meters high, cylindric, 2–2.5 dm. in diameter, sometimes swollen at the base. Leaf-blades of middle-sized trees 3 m. broad, silvery beneath, those of young plants sometimes 4 m. broad; leaf-segments 40–50, united to about one half, 3–5 cm. wide, notched at the apex into rigid acuminate narrow lobes 1–3 cm. long, revolute-margined, the midrib prominent on the under side; petioles very stout, compressed, 2-edged, as long as the blades or longer; ligule triangular, acute, 2–2.5 cm. long; inflorescence glabrous, much shorter than the leaves; bracts oblong, puberulent, with a triangular-acute apex; ultimate branches of the inflorescence rather stout, 10–12 cm. long; pedicels stout, 1.5–2 mm. long, about twice as long as the triangular acuminate bractlets; calyx hemispheric-campanulate, minutely toothed; fruit subglobose, 6–7 mm. in diameter; seeds brown, globular, shining, very nearly smooth, 5 mm. in diameter.

Eastern slopes of the John Crow Mountains at 450 to 600 meters altitude (*Britton 4151; Harris & Britton 10,759*).

Chamaecrista fasciata sp. nov.

Herbaceous, the roots apparently annual, the stems slender, erect, little-branched, 5–10 dm. high, more or less pubescent with long curled hairs. Leaves 8 cm. long or less, short-petioled; leaflets 20–40, linear-lanceolate, inequilateral, rounded at the base, acute and aristulate at the apex, strongly veined, ciliolate, but otherwise nearly glabrous, 10–12 mm. long, 1.5–2 mm. wide; stipules lanceolate-attenuate, strongly veined, 8–10 mm. long; gland scutellate, sessile, 0.5 mm. wide, borne on the petiole below the lowest pair of leaflets; peduncles a little shorter than the petioles, villous, the bracts ovate-acuminate, about 4 mm. long; sepals lanceolate, acuminate, villous on the back, about one half as long as the petals; flowers 1.5 cm. broad; ovary and young pod densely long-villous; mature pod linear, a little curved, some-

what narrowed toward the base, 4–5 cm. long, 5–6 mm. wide, obliquely short-beaked, loosely villous, black-banded over the spaces between the seeds and along both margins.

Bank, between Bath and Cuna-Cuna Gap, at 300 m. altitude (*Britton 3500*, September, 1908).

***Meibomia umbrosa* sp. nov.**

Stem trailing, sometimes 1 m. long, densely villous to the base. Leaflets ovate to ovate-lanceolate, 6–10 cm. long, acute or acuminate at the apex, the lateral ones short-stalked, obliquely obtuse at the base, the middle one narrowed or blunt at the base and longer-stalked, all finely and rather densely pubescent beneath, sparingly pubescent above; petioles about as long as the leaflets, densely villous; stipules lance-subulate, about 1 cm. long; peduncles arising in the lower axils, as long as the leaves or longer, slender, pubescent, bearing a few distant lance-subulate bracts; flowers purple; fruiting racemes 1 dm. long or longer, the filiform pedicels spreading, about 2 cm. long; loment 1–3-jointed, the upper suture undulate; loment-joints obliquely oblong, nearly separated, uncinat, about 8 mm. long and 5 mm. high.

Shaded grassy hillside, Troy, Jamaica (*Britton 444*, Sept. 13–18, 1906, type); woodlands near Newport, Manchester (*Britton 3209*); nearest to *M. axillaris* (Sw.) Kuntze, which is nearly glabrous, with blunt leaflets.

***Cissus* (?) *cucurbitacea* Britton, sp. nov.**

A woody, high-climbing vine, the stem up to 7.5 cm. thick at the base, the twigs and leaves fleshy. Leaves triangular-ovate, 6–10 cm. long, cordate at the base with a widely open sinus, 5-nerved and pinnately veined, remotely dentate with apiculate teeth, scabrous on both sides with short stiff hairs or when old papillose, the petioles 2–3 cm. long; tendrils slender, 1–2 dm. long.

Dry rocky hillside, Fort Henderson, Jamaica (*Britton & Hollick 1812*, March 2, 1908, type); base of Healthshire Hills (*Harris & Britton 10,512*).

An interesting xerophytic vine, of which we do not yet know either flowers or fruit.

***Xylophylla contorta* sp. nov.**

A much branched shrub about 1 m. high, the main branches terete, the twigs flat and 2-edged. Phyllodes pale green, linear,

5-7 mm. wide at the middle, 6-10 cm. long, narrowed to both ends, acutish, many of them curved or falcate, finely and closely striate, the upper ones floriferous to below the middle, the crenatures 1-flowered, distant; stipules triangular-lanceolate, 2 mm. long or less; pedicels of pistillate flowers 3.5-4.5 mm. long, very slender, thickened above, sepals broadly ovate, obtusish, about 1 mm. long; fruit depressed, 3-lobed, obscurely reticulated, 3.5 mm. wide, nearly 2 mm. high; seed obovoid, 1.5 mm. long, minutely black-dotted.

Dry hillside, St. Ann's Bay (*Britton 2515*, March, 1908).

***Tricera macrophylla* sp. nov.**

An erect virgate simple or sparingly branched shrub 1-2 meters high, with rough bark. Leaves narrowly elliptic or lanceolate-elliptic, very large for the genus, flat, 15-24 cm. long, 5-8 cm. wide, subcoriaceous, acute at both ends, the midvein stout, prominent beneath, impressed above, the veins numerous, slender, diverging nearly at right angles from the midvein and connected at 2-3 mm. from the margin, the ultimate venation finely and strongly reticulated, the stout petiole 1-1.5 cm. long; capsules brown, finely pubescent, 7-8 mm. long, woody, their recurved beaks 2 mm. long; inflorescence very short-stalked, lateral and supra-axillary; seeds linear-oblong, shining, 5 mm. long.

Woodlands, eastern and southeastern slopes of the John Crow Mountains at 500 meters altitude (*Harris & Britton 10,770*, March 11, 1909, type; *Britton 4173, 4193*).

***Clusia silvicola* sp. nov.**

A tree, 12 m. high. Leaves firm, obovate, 13 cm. long, 7-8 cm. wide, firm, thick, dull, inconspicuously veined, rounded at the apex, cuneate-narrowed at the base, the midvein rather prominent beneath, the stout petiole 1 cm. long; fruit ovoid, white, 7 cm. long, about 5 cm. thick; sepals 4, broad; bracts much smaller than the sepals; stigmas 8, sessile, oblong-obovate, 8 mm. long, 4-5 mm. wide, with a slight depression near the base.

Wooded hill near Dolphin Head, Hanover, 400 m. altitude (*Britton 2330*, March 18-20, 1908).

***Homalium integrifolium* sp. nov.**

A tree, about 15 m. high, the foliage glabrous. Leaves oblong-lanceolate, 10-15 cm. long, 4 or 5 cm. wide, entire-margined or with a few low crenatures, chartaceous, attenuate-acuminate at

the apex, obtuse or somewhat narrowed at the base, the midvein impressed above, rather prominent beneath, the primary veins about 12 on each side, the ultimate venation reticulated; petioles 6–8 mm. long; raceme 8–10 cm. long, its axis puberulent; pedicels 2–4 mm. long; hypanthium, sepals, and petals puberulent; sepals linear, acutish, 2.5 mm. long; petals ovate with a bluntish point, nearly 3 mm. long; stamens numerous; glands of the disk nearly contiguous; ovary depressed-globose.

Woodlands, eastern slopes of the southern end of the John Crow Mountains (*Harris & Britton 10,741*, March 10, 1909).

***Anamomis grandis* sp. nov.**

A tree up to 13 meters high, the bark smooth, reddish, the branches gray, the young twigs sparingly pubescent. Leaves thin in texture, the blades pale green on both sides, not shining, copiously punctate, rather prominently veined, obovate, 4–6 cm. long, 2–4 cm. wide, obtuse or sometimes emarginate at the apex, narrowed or cuneate at the base, the midvein sparingly pubescent, impressed above, rather prominent beneath, the pubescent petioles 7–10 mm. long; peduncles slender, pubescent, 3–4 cm. long; cyme 3-flowered, the central flower sessile, the lateral ones on pubescent diverging pedicels 6 mm. long; hypanthium subglobose, appressed-pubescent; sepals concave, 2.5 mm. broad, rather broader than long, punctate, ciliate.

Dry rocky woodlands, Great Goat Island (*Harris 9307*).

Differs from *A. fragrans* (Sw.) Willd., of the Jamaica mountains, which has coriaceous, elliptic, shining, short-petioled leaves, and nearly erect pedicels.

***Petesioides subverticillatum* sp. nov.**

A woodland shrub, 1–2 m. high, with slender branches. Leaves subopposite or subverticillate, sessile, oblong-elliptic to ovate-oblong, 5–14 cm. long, 6 cm. wide or less, cordate-clasping at the base with rounded auricles, acute or obtusish at the apex, indistinctly pinnately veined and slightly reticulated, punctate, the margins low-crenulate or entire; inflorescence bipinnate-paniculate, terminal, 4–6 cm. wide; pedicels rather stout, 1.5–3 mm. long; flowers 4-merous; calyx and corolla epunctate; staminate calyx 2.5 mm. long, its lobes semiorbicular-ovate, rounded, about one third as long as the tube; corolla as long as the calyx and similarly lobed; stamens nearly twice as long as the corolla; pistillate calyx 1 mm. long, the corolla a little shorter; staminodia half as long as the corolla; ovary ovoid; style short and stout;

fruit subglobose, red, 2.5 mm. in diameter, apiculate with the base of the style.

Woodlands, southeastern slopes of the John Crow Mountains, 350–600 m. altitude (*Harris & Britton 10,694*, type; *Britton 3937*; *Harris & Britton 10,701*); slopes, Cuna-Cuna Gap, *Britton 4049*)

***Plumiera jamaicensis* sp. nov.**

An irregularly branched tree 8–10 m. high, the trunk up to 3 dm. in diameter. Leaves firm in texture, the blade elliptic, 12–15 cm. long, 5–7 cm. wide, rounded or emarginate at the apex, narrowed at the base, glabrous on both sides, or minutely puberulent on the veins beneath, the upper surface dark green with the veins somewhat impressed, the under surface lighter green with the broad nerves very prominent, diverging nearly at right angles from the strong elevated midvein, the ultimate venation strongly reticulated; petiole stout, 3–4.5 cm. long; peduncle stout, 18 cm. long or less; flowers numerous; bracts broadly ovate, acutish, 1.5 mm. long; pedicels 8–13 mm. long; calyx nearly truncate, with 5 short teeth; corolla white with a yellowish blotch at the base of each lobe, the tube 1 cm. long, the lobes 2–2.5 cm. long, oblong-obovate, obtuse; pods 15–22 cm. long, 1.5–2 cm. in diameter.

Coastal hillsides and thickets, parish of Portland. Wheelerfield, March 13, 1909 (*Britton 4123*, type); near Port Antonio, Sept. 25, 1906 (*Britton 870*). Near *P. emarginata* Griseb., of Cuba.

***Valerianoides jamaicensis* × *mutabilis*.**

Hybrids are not often seen in the West Indian flora, but the one here recorded seems to be genuine. I found it growing near its parents on a roadside between Mandeville and Brown's Town, Manchester, with characters of foliage and flowers exactly intermediate.

***Lantana jamaicensis* sp. nov.**

A vine, climbing on trees, up to 7 meters long, or shrubby and 1 meter high, or less, the branches long, slender, terete, densely puberulent. Leaves lanceolate to ovate, 2.5–9 cm. long, rather firm in texture, acute or acuminate at the apex, narrowed or rounded at the base, crenulate, sparingly pubescent above, densely puberulent and rather prominently veined beneath, or becoming glabrate, the petioles 1 cm. long or less; peduncles puberulent, 2–4 cm. long; heads involucrate, subglobose in flower, 1–1.5 cm.

in diameter, somewhat elongating in fruit; involucre bracts ovate to lanceolate, acutish, puberulent; corolla 6.5–10 mm. long, white or pale pink with a yellowish eye, puberulent, its lobes irregularly rounded; calyx-limb undulate, ciliate; stamens borne near the middle of the corolla-tube.

Banks and woodlands, Manchester and St. Elizabeth. Type from between Malvern and Stanmore Hill, Santa Cruz Mountains (*Britton* 1097, Sept. 3, 1907).

Apparently recorded by Grisebach as *Lantana stricta lilacina*, but it is not *Lantana lilacina* of South America. Certainly distinct from *Lantana stricta*.

***Lantana arida* sp. nov.**

A widely branched shrub 1 meter high, or less, pubescent with long simple hairs and short glandular hairs intermixed; branches slender, 4-angled. Leaves ovate to oval, 1–2 cm. long, obtuse at both ends, or acutish at the apex, densely pubescent on both sides, rather firm in texture, crenate-dentate, the venation impressed above, prominent beneath, about 4 veins on each side of the midvein; petioles 2–3 mm. long; peduncles slender, longer than the leaves; inflorescence capitate; fruit oblong, 3–4 mm. long.

Dry rocky hillside, Salt Pond Hills, Kingston Harbor, in old fruit March 2, 1908 (*Britton & Hollick* 1824).

***Rondeletia elegans* sp. nov.**

A tree, 5 m. high, the twigs densely appressed-pubescent. Leaves rather firm in texture, elliptic, the blades 11–16 cm. long, 9 cm. wide or less, glabrous above, sparingly pubescent on the veins beneath when old, quite densely pubescent beneath when young, acuminate at the apex, narrowed at the base, the midvein prominent beneath, with about 7 veins on each side, the stout pubescent petioles 2–4 cm. long; cymes axillary, pubescent, the peduncles about as long as the petioles; flowers all pedicelled; hypanthium hemispheric, pubescent, 1.5 cm. long; sepals narrowly lanceolate, pubescent, about as long as the hypanthium; corolla salverform, 10–14 mm. long, the cylindric crimson tube about twice as long as the 5 tawny-yellow obovate-orbicular undulate lobes; stamens sessile near the top of the corolla-tube; style 3 mm. long, pubescent below; fruit about 7 mm. long.

Woodlands, eastern slopes of the John Crow Mountains at 520 m. altitude (*Britton* 4143, March, 1909, type; *Harris & Britton* 10,744).

Rondeletia pallida sp. nov.

A tree, 10 m. high, the young foliage sparingly pubescent. Leaves thin, bright green, oblong-lanceolate to elliptic, 18 cm. long or less, 2–7 cm. wide, glabrous or with a few scattered hairs beneath and on the slender petioles when old, sharply acuminate at the apex, cuneate-narrowed at the base, the narrow midrib rather prominent on both sides with 4 or 5 pairs of veins on each side, the petioles 1–2 cm. long; cymes axillary; peduncles slender, a little shorter than the petioles; bractlets linear-lanceolate, pubescent, 2–3 mm. long; flowers in threes on the branches of the cyme, all on slender glabrous pedicels 3–5 mm. long; hypanthium hemispheric-campanulate, 1.5–2 mm. high; sepals triangular-lanceolate, acuminate, nearly as long as the hypanthium; corolla white or yellowish, fading brownish, 12–15 mm. long, salverform, glabrous or puberulent, the cylindric tube twice to three times as long as the 5 suborbicular, rounded, spreading lobes; stamens borne near the top of the corolla-tube, the filaments shorter than the anthers; style about 3 mm. long, pubescent below; stigma 2-lobed; fruit about 6 mm. long.

Woodlands, southeastern foothills of the John Crow Mountains, 350 m. altitude (*Britton 3992*, March, 1909, type; *3940; 4146; Harris & Britton, 10,680, 10,724*).

Guettarda constricta sp. nov.

A tree about 7 m. high, the twigs terete. Leaves broadly ovate; blades 17 cm. long or less, about two thirds as wide as long, rather firm in texture, glabrous and bright green above or puberulent on the veins, pale green or whitish and densely puberulent beneath, short-acuminate at the apex, obtuse or subtruncate and sometimes strongly inequilateral at the base, with 8 or 9 pairs of veins on each side of the prominent midvein; petioles stout, puberulent, 6 cm. long or less; peduncles axillary, somewhat angled, puberulent, as long as the petioles or longer; cymes several-flowered; fruit sessile, oval, finely puberulent, 10–12 mm. long, 8 or 9 mm. thick, obtuse at the apex, narrowed at the unequal base, distinctly constricted at the middle.

Wooded hillside, Grove Place, Manchester (*Britton 3769*, September, 1908). The fruit of *G. argentea* is globular.

Psychotria subcordata sp. nov.

A slender tree, 5 m. tall, the twigs and leaves glabrous. Leaves lanceolate to oblong-lanceolate, thin in texture, 7–10 cm. long,

2.5–3.5 cm. wide, sessile, subcordate at the base, acuminate at the apex, dark green above, paler beneath, the midvein rather prominent on both sides, the veins about 10 on each side of the midvein, diverging from it nearly at right angles, curving upward and united 2 or 3 mm. from the margins; stipules apparently distinct, deciduous; cyme sessile, 3-rayed, the rays slender, glabrous, 2.5–3 cm. long, the 2 or 3 raylets 1–1.5 cm. long; fruiting pedicels 2–5 mm. long; fruit globose-oblong, red, nearly 1 cm. long; pyrenae oblong, 8 mm. long, 4 mm. wide, strongly 3-crested longitudinally, with two shallow grooves on the nearly flat commissural side.

Woodlands, eastern slopes of the John Crow Mountains at 520 m. altitude (*Britton 4144*). Related to the Cuban *P. auriculata* C. Wright.

***Lobelia grandifolia* sp. nov.**

Stem stout, somewhat pubescent, about 9 dm. high. Leaves flaccid, large, about 3 dm. long, 10–12 cm. wide, abruptly acuminate at the apex, cuneate at the base, crenulate all around, glabrous and dull green above, rather bright green beneath and pubescent on the veins, the broad flat midvein prominent, the numerous lateral veins arching upward; peduncles stout, pubescent, about 1.5 dm. long; raceme densely many-flowered, 1–1.5 dm. long; bracts linear-lanceolate, acuminate, glandular-serrate, nearly as long as the pedicels; pedicels about 2 cm. long; hypanthium campanulate, glabrous, 1 cm. long; sepals linear-lanceolate, glandular-serrate, 12–15 mm. long, 2 mm. wide; corolla yellowish white, greenish yellow, or brownish, glabrous, strongly curved, about 2.5 cm. long; andrœcium stout, pubescent, 1.5–2 cm. long; anthers 9 mm. long, loosely pubescent, two of them bearded at the tip.

Woodlands, eastern slopes of the John Crow Mountains at about 400 meters elevation (*Britton 4194*, type; *4197*; *Harris & Britton 10,725*). Related to *L. Fawcettii* Urban, in which the leaf-blade is decurrent on the petiole nearly or quite to the base, the sepals narrower and longer, the foliage glabrous or very nearly so.

***Bidens Shrevei* sp. nov.**

Glabrous; stems woody, diffusely branched, reclining or straggling, 3–6 dm. long, the twigs striate. Leaves simple, ovate to lanceolate, 5–10 cm. long, acuminate at the apex, obtuse or subtruncate at the base, sharply serrulate, the slender petioles

one third to one half as long as the blades, the finely reticulate venation much darker in color than the parenchyma; heads several or numerous; peduncles 6 cm. long or less; involucre oblong-cylindric, about 1 cm. high, its bracts linear, spreading at anthesis, acutish and puberulent at the apex; rays oval to oblong, bluntish or emarginate, 1.5–2 cm. long, strongly veined; disk-corollas tubular-cylindric, narrowed below, 7–10 mm. long, with acute triangular-ovate teeth; anthers and style-branches slightly exserted; achenes linear, 12–16 mm. long, about 1 mm. thick, sparingly pubescent on the angles, the two yellowish awns 3–5 mm. long, downwardly barbed.

Banks at higher altitudes in the Blue Mountains; type collected by Forrest Shreve at Cinchona, November, 1905.

***Chaenocephalus propinquus* sp. nov.**

A shrub, 2 m. high. Leaves firm in texture, oblanceolate, 5–9 cm. long, acute at the apex, cuneately tapering from above the middle to a sessile entire base, sharply and rather coarsely dentate above the middle, smooth on both sides or minutely scabrate-puberulent beneath, the pinnate venation not very prominent; inflorescence corymbose, 5–8 cm. broad; peduncles appressed-pubescent, 2–4 cm. long, nearly erect, or narrowly ascending; heads numerous, turbinate-campanulate, 6–7 mm. high; involucre bracts pubescent, the outer narrowly oblong to lanceolate, obtuse, 5.5 mm. long, the inner broadly oblanceolate, sharply acute, 5 mm. long, 2 mm. wide; corolla 3.5 mm. long, nearly cylindric above the narrowed base, its lobes triangular-ovate, acute; pappus-bristles about one half as long as the corolla; achene cuneate-oblanceolate, 4 mm. long, 1.5 mm. wide at the top, scabrous-pubescent, the wings nearly 1 mm. wide above.

In rocky soil, Lover's Leap, Yardley Chase, Santa Cruz Mountains, at 530 meters altitude (*Britton 1144*, Sept. 4, 1907; type; *Harris 9672*). Nearly related to *C. venosus* Urban, from wet woodlands on the summit of John Crow Peak, at 2000 meters altitude. (See Urban, *Symb. Ant.* 5: 526.)

15. THE GENUS *BADIERA* DC.

BADIERA DC. Prodr. 1: 334. 1824

Type species: *Badiera Penaea* (L.) DC.

Leaves obovate to oblong, 1–4 cm. long, obtuse or emarginate.

Leaves obovate.

Pubescent; leaves 2–2.5 cm. long, papillose-scabrous. 1. *B. Penaea*.

- | | |
|---|-----------------------------|
| Puberulent, leaves 1.5 cm. long or less. | 2. <i>B. virgata</i> . |
| Leaves oblong. | 3. <i>B. oblongata</i> . |
| Leaves ovate, oval or ovate-lanceolate, 2.5-9 cm. long. | |
| Leaves bluntly acuminate, or bluntly acute at the apex. | |
| Leaves 2-3 times as long as wide. | 4. <i>B. diversifolia</i> . |
| Leaves less than twice as long as wide. | 5. <i>B. cubensis</i> . |
| Leaves rounded or emarginate at the apex. | 6. <i>B. montana</i> . |
| Unknown to me, except from description. | 7. <i>B. Berteriana</i> . |

I. *BADIERA* *PENAEA* (L.) DC. Prodr. 1: 335. 1824

Polygala Penaea L. Sp. Pl. 703. 1753.

Polygala domingensis Jacq. Stirp. Am. ed. min. 252. 1788.

Badiera domingensis DC. Prodr. 1: 335. 1824.

Mountains of Haiti and Santo Domingo. This plant is represented in the herbarium of the New York Botanical Garden by the following specimens: "In montibus, Hispaniola (Jacquemont); Sierra del Palo Quemado, Santo Domingo, at 500 meters (*Eggers* 1897); pineland, Marmelade, Haiti, at 900 to 1100 meters (*Nash* 719; *Nash & Taylor* 1312).

Professor Chodat ignores *Badiera Penaea* in his monograph, and describes *Eggers* no. 1897 as *Polygala domingensis*, not recognizing the genus *Badiera*. Mr. Nash's no. 719, which is in young fruit, so closely resembles the original figure of *Polygala Penaea* L. (Plumier, ed. Burmann, *pl.* 214. *f.* 1) that it appears to me the two supposed species must be one; the character cited by De Candolle (Prodr. 1: 335) of flowers solitary in *B. Penaea* and flowers racemose in *B. domingensis* is doubtful; the Plumier figure shows the plant in fruit, and in this as in other species of the genus often only one flower of the cluster produces fruit.

2. *Badiera virgata* sp. nov.

A shrub or small tree up to 4 meters high, the branches nearly erect, densely leafy, the twigs finely puberulent. Leaves obovate, or obovate-oblongate, rigid, 10 mm. long or less, 4-8 mm. wide, puberulent or minutely papillose-puberulent, or becoming nearly or quite glabrous when old, rounded at the apex, or some of them slightly emarginate, narrowed at the base, the petioles pubescent, 1-1.5 mm. long, the midvein slightly elevated beneath, the lateral venation wholly obscure; flowers several in the axillary clusters or solitary, yellow-green, 2 mm. long; fruiting pedicels 1.5 mm. long; fruit 5 mm. long, the lobes narrowly winged (only imperfect ones with one lobe developed seen).

Thickets in dry soil, Oriente, Camagüey, and Santa Clara, Cuba. (Type, *Britton 2086*, from United States Naval Station, Guantanamo Bay, March 17-30, 1909.)

3. *BADIERA OBLONGATA* N. L. Britton, Bull. N. Y. Bot. Gard. 5: 314. 1907

DISTRIBUTION: Bahama Islands: Andros, New Providence, Cat Island, Acklin's Island, Crooked Island, Watling's Island, Caicos Islands; Cayo Sabinal and mainland of Camagüey, Cuba (*Shafer 878 1085, 977*; also collected in Cuba by Wright, *no. 115* in part).

The Cuban specimens here referred have leaves mostly more obtuse at the base than those of the typical Bahamian plant, but a specimen from Andros Island (*Small & Carter 8681*) seems to be identical with them.

A plant from the palm barren at Santa Clara, Cuba (*Britton & Wilson 6066*), has shorter emarginate leaves 12-20 mm. long, with the midvein deeply impressed above; it is tentatively referred to this species.

4. *BADIERA DIVERSIFOLIA* (L.) DC. Prodr. 1: 334. 1824

Polygala diversifolia L. Sp. Pl. 703. 1753.

Polygala jamaicensis Chodat, Mém. Soc. Phys. Genève 31²:

11. 1893.

Jamaica, in hillside thickets and woodlands in relatively dry districts from sea level up to 1100 meters elevation.

5. *Badiera cubensis* sp. nov.

Polygala diversifolia Chodat, Mém. Soc. Phys. Genève 31²: 10. 1893. Not L.

Leaves ovate to elliptic, 2.5-6 cm. long, 1.5-3.5 cm. wide, bluntly acuminate or acute at the apex, cuneate-narrowed or acute at the base; fruit 7.5-8.5 mm. long, 10 mm. wide, lobed to about one third, the lobes rounded.

Cuban woodlands; type, *Wright, no. 1913* from "La loma pelada, Dec. 27," in herb. N. Y. Bot. Gard.; also collected by Wright at "La Sabanilla" and distributed under this same number; Wright's *no. 3496* belongs to this species, and also part of his *115*, collected in eastern Cuba.

Professor Chodat indicates this Cuban species as occurring also in Jamaica, but this I take to be an error.

6. *Badiera montana* sp. nov.

A shrub, 3 m. high, the twigs densely puberulent. Leaves broadly oval, 4–5 cm. long, 2.5–3.5 cm. wide, firm in texture, quite densely puberulent when unfolding and sparingly puberulent when mature, rounded or slightly emarginate at the apex, acutish at the base, dull dark green, the midvein slightly impressed in the upper surface, elevated on the underside, the lateral veins few, slender, the rather stout puberulent petioles 2–3 mm. long; inflorescence several-flowered; bracts ovate, acute, pubescent, about 0.5 mm. long; fruiting pedicels pubescent, 1.5–2 mm. long; stipe of the fruit 1 mm. long; fruit 8–10 mm. long, 10–12 mm. wide at the top, puberulent, lobed to about one fifth, the lobes rounded-truncate.

Rocky wooded hill, Arroyo Grande, Trinidad Mountains, Cuba, at about 700 meters altitude (*Britton & Wilson* 5461, March 11, 12, 1910).

Differs from *B. cubensis* by its obtuse leaves, larger and longer fruit.

7. *BADIERA* *BERTERIANA* Spreng. Syst. 3: 172. 1826

Described as with oblong-lanceolate obtuse leaves and recorded as from Hispaniola. Professor Chodat does not refer to this species in his monograph; it was collected by Bertero and called by him *Polygala domingensis*, but Sprengel's description indicates that it is not *Polygala domingensis* of Jacquin, here referred to *Badiera Penaea* (L.) DC.

EXCLUDED SPECIES.

Badiera (?) *acuminata* (Willd.) DC. Prodr. 1: 335 is *POLYGALA ACUMINATA* Willd. Sp. Pl. 3: 887, native of Peru and Chile. Professor Chodat describes it as new in his monograph (p. 46), but the name dates from at least the year 1803.

Badiera (?) *divaricata* DC. Prodr. 1: 335, from Para, South America (presumably Brazil), was not taken up by Mr. A. W. Bennett in the Flora Brasiliensis.